Agenda

- Data is changing the world!

- Have **Expertise**, need **Coordination**!

- Opportunity Costs!
What has changed?
Opportunities

LinkedIn job search results for Data Science in the United States, showing over 54,700+ results.
Opportunities

Showing 54,750 results

Showing 2,327 results

Higher than average!
What is Data Science?

Data science is concerned with all aspects of the creation, management, and analysis of data, focusing in particular on the application of computational methods to digital data

- Allen Renear
Data Science Education

*Every Illinois student should have the opportunity to have a meaningful exposure to data science:*

- Multiple on-ramps
- Open to students not majoring in Statistics, CS, Mathematics, or Science

Flexible to encompass many domains

Collaborative
DS Education: Pillars

• Mathematical foundations
• Computational thinking
• Statistical thinking
• Data management, description, curation
• Data modeling
• Ethical problem solving
• Communication
• Domain-specific considerations
DS Education: Pathways

- Minor
- Major
- X+DS(X)
- Introductory course (modularized?)
- Computer Science/ECE, Information Science, Statistics, Mathematics
- Contributions from multiple colleges
- Domain-specific contributions
Our Foundation

8 Summits
1000+ Participants
10+ Summits (2018)
Many Challenges
Many Challenges
Challenges: Opportunities

- Improving Societal Resilience
- Living in a Connected World
- Personalized Health
- Reducing World Hunger
- Understanding the Natural World
Challenges: Opportunities

- Improving Societal Resilience
- Living in a Connected World
- Understanding the Natural World
Challenge: Deep Dive
Challenge: Deep Dive

GM just revealed a fully autonomous electric car — and it doesn't have a steering wheel
Challenge: Deep Dive
Challenge: Internal

Why not?
Where is Data Science?
Data is in our DNA
Challenge: Coordination
Meanwhile ...
Institute Opportunities

Proactive

Research

Now Hiring

Impact

IDSI

Data Analytics

Industry

Community Outreach

Industrial Partners

Visitor Program

Faculty Research

All NSF

$8 B

$203 B
Institute Opportunities

Data + Ideas Incubator

Education
Community Data
Projects

Research Data
Projects

Sharing & Learning Together

IDS

Illinois
Recap

- Data is changing the world!

- Have **Expertise**, need **Coordination**!

- Opportunity Costs!
Backup Slides
Data Science Task Force

- **Chair**: Robert J. Brunner (School of Information Sciences; Accountancy, College of Business)
- Vikram Adve (Computer Science, College of Engineering)
- Brian Aldridge (Veterinary Clinical Medicine, College of Veterinary Medicine)
- Gabrielle Allen (Education, College of Education)
- Scott Althaus (Political Science and Communication, College of Liberal Arts & Sciences; Director of Cline Center for Advanced Social Research)
- * Matt Ando (Mathematics, College of Liberal Arts & Sciences)
- Kathy Baylis (Agriculture and Consumer Economics, College of Agriculture, Consumer, and Environmental Sciences)
- * Roy Campbell (Computer Science, College of Engineering)
- Peter Christensen (Agriculture and Consumer Economics, College of Agriculture, Consumer, and Environmental Sciences)
- * Jana Diesner (School of Information Sciences)
- William Gropp (Computer Science, College of Engineering; Director of NCSA)
- Matt Hudson (Crop Sciences, College of Agriculture, Consumer, and Environmental Sciences)
- Heidi Imker (Library)
- William H. Sanders (Electrical and Computer Engineering, College of Engineering)
- * Doug Simpson (Statistics, College of Liberal Arts & Sciences)
- Jake Sosnoff (Department of Kinesiology and Community Health, College of Applied Health Science)
- * Ramanath Subramanyam (Business Administration, College of Business)
- Venugopal Veeravalli (Electrical and Computer Engineering, College of Engineering)
- Pramod Viswanath (Electrical and Computer Engineering, College of Engineering)
- * Ted Underwood (English, College of Liberal Arts & Sciences; School of Information Sciences)

* also a member of the Data Science Education Task Force
## Challenge: Landscape

<table>
<thead>
<tr>
<th></th>
<th>Peer One</th>
<th>Peer Two</th>
<th>Peer Three</th>
<th>Peer Four</th>
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<td><strong>Year Founded</strong></td>
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Challenge: Disconnect

1815 Miles
Hey Siri,

How many students are there at the University of Illinois?

The answer is about 45140 people.

Wolfram Alpha

Input interpretation
University of Illinois at Urbana-Champaign all students

Result
45 140 people (2014–15 school year estimates)

History
(from 2004 to 2014)
(in people)

Enrollment
all students 45 140 people (2014–15 school year estimates)
Challenge: Disconnect

The answer is about 45140 people.

How do we interact with Data?